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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/644,975	08/21/2003	Mei-Rurng Tseng	0941-0814P	6357
2292	7590	09/27/2005	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH			QUARTERMAN, KEVIN J	
PO BOX 747			ART UNIT	
FALLS CHURCH, VA 22040-0747			PAPER NUMBER	
			2879	

DATE MAILED: 09/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

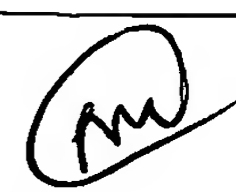
# Office Action Summary

Application No.

10/644,975

Applicant(s)

TSENG ET AL.



Examiner

Kevin Quarterman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 20 July 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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## **DETAILED ACTION**

### ***Response to Amendment***

1. Applicant's amendment and remarks received 20 July 2005 have been entered and overcome the objections to the title and claims 1 and 30.

### ***Drawings***

## **INFORMATION ON HOW TO EFFECT DRAWING CHANGES**

### **Replacement Drawing Sheets**

Drawing changes must be made by presenting replacement sheets which incorporate the desired changes and which comply with 37 CFR 1.84. An explanation of the changes made must be presented either in the drawing amendments section, or remarks, section of the amendment paper. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). A replacement sheet must include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of the amended drawing(s) must not be labeled as "amended." If the changes to the drawing figure(s) are not accepted by the examiner, applicant will be notified of any required corrective action in the next Office action. No further drawing submission will be required, unless applicant is notified.

Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and within the top margin.

### **Annotated Drawing Sheets**

A marked-up copy of any amended drawing figure, including annotations indicating the changes made, may be submitted or required by the examiner. The annotated drawing sheet(s) must be clearly labeled as "Annotated Sheet" and must be presented in the amendment or remarks section that explains the change(s) to the drawings.

### **Timing of Corrections**

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Applicant is required to submit acceptable corrected drawings within the time period set in the Office action. See 37 CFR 1.85(a). Failure to take corrective action within the set period will result in ABANDONMENT of the application.

If corrected drawings are required in a Notice of Allowability (PTOL-37), the new drawings MUST be filed within the THREE MONTH shortened statutory period set for reply in the "Notice of Allowability." Extensions of time may NOT be obtained under the provisions of 37 CFR 1.136 for filing the corrected drawings after the mailing of a Notice of Allowability.

2. The replacement drawings were received on 20 July 2005. These drawings are NOT acceptable.
3. The replacement sheets do not include all of the figures appearing on the immediate prior version of the sheet—i.e., Fig. 3, Fig. 4, and Fig. 5 are not included on the replacement sheets. If those figures are to be canceled, they must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency.
4. Since the replacement sheets of drawings are not acceptable, the objections to the original drawings cited by the Examiner in the previous office action are repeated in this office action.
5. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "stacked organic luminescent layers" of claim 7; the "first nanostructured organic electroluminescent recovery layer" on the first electrode between the first electrode and the organic luminescent layer of claim 32; and the "second nanostructured organic electroluminescent recovery layer" on the organic luminescent layer between the

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organic luminescent layer and the second electrode of claim 33 must ALL be shown or the features canceled from the claims. No new matter should be entered.

6. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 1-34 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which

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was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

9. Applicant has amended independent claims 1 and 30 to include a limitation of the recovery layer having “nanoscale metal particles therein.” The Examiner notes that applicant’s disclosure provides no standard for ascertaining an appropriate range for the *nanoscale* metal particles. The term “nanoscale” is not clearly defined and applicant’s disclosure does not provide any working examples to enable one skilled in the art to make and/or use the invention. Thus, the Examiner submits that the experimentation needed to practice the invention is undue or unreasonable. Due to their dependency upon independent claims 1 and 30, claims 2-29 and 31-34 are also rejected for failing to comply with the enablement requirement. Claims 21, 24-26, and 28-29 also include a limitation of nanoscale metal particles.

### ***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claims 1, 2, and 5-29 are rejected under 35 U.S.C. 102(e) as being anticipated by Raychaudhuri (US Pub. 2004/0140758).

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12. Regarding independent claim 1, Figure 3 of Raychaudhuri shows an organic electroluminescent device comprising a substrate (101); a first electrode (108) on the substrate; an organic luminescent layer (105) on the first electrode; a second electrode (107) on the organic luminescent layer, wherein the organic luminescent layer is between the first electrode and the second electrode; and a nanostructured organic electroluminescent recovery layer (109) having nanoscale metal particles therein. The Examiner notes that Raychaudhuri does not use applicant's nomenclature of a "nanostructured organic electroluminescent recovery layer" but instead refers to layer 109 as a "transmissive enhancement layer" having a thickness of 20-150nm (pg. 4, ¶ [0068]). Since Raychaudhuri discloses the layer being *nanostructured* and having *nanoscale* metal particles, as evidenced by its thickness, the Examiner notes that applicant's claimed nanostructured organic electroluminescent recovery layer and Raychaudhuri's transmissive enhancement layer only differs by name.

13. Regarding claim 2, Figure 3 of Raychaudhuri shows the nanostructured organic electroluminescent recovery layer (109) on the substrate between the substrate (101) and the first electrode (108).

14. Regarding claim 5, Figure 5 of Raychaudhuri shows the nanostructured organic electroluminescent recovery layer (109x) on the second electrode (107x).

15. Regarding claim 6, Figure 5 of Raychaudhuri shows the organic luminescent layer comprising a single organic luminescent layer (105).

16. Regarding claim 7, Figure 5 of Raychaudhuri shows the organic luminescent layer comprising stacked organic luminescent layers (103, 104, 105, 106).

17. Regarding claim 8, Raychaudhuri discloses the organic luminescent layer comprising fluorescent luminescent material or phosphorescent luminescent material (pg. 4, ¶ [0064]).

18. Regarding claim 9, Raychaudhuri discloses the organic luminescent layer comprising molecular organic luminescent material (pg. 4, ¶ [0062-0064]).

19. Regarding claim 10, Raychaudhuri discloses the organic luminescent layer comprising polymer organic luminescent material (pg. 4, ¶ [0062-0064]).

20. Regarding claim 11, Raychaudhuri discloses the substrate being transparent or opaque glass or plastic (pg. 3, ¶ [0043]).

21. Regarding claim 12, Raychaudhuri discloses the substrate being transparent glass (pg. 3, ¶ [0043]). The Examiner notes that even though claim 12, which depends upon claim 11, lists particular materials for a plastic substrate, claim 11 requires the substrate to be glass or plastic.

22. Regarding claim 13, Raychaudhuri discloses the first electrode (108) being transparent, metal, or complex (pg. 4, ¶ [0067]).

23. Regarding claim 14, Raychaudhuri discloses the second electrode (107) being transparent, metal, or complex (pg. 4, ¶ [0066]).

24. Regarding claim 15, Raychaudhuri discloses the transparent electrode being ITO, IZO, AZO or ZnO (pg. 3, ¶ [0044]).

25. Regarding claim 16, Raychaudhuri discloses the transparent electrode being ITO, IZO, AZO or ZnO (pg. 3, ¶ [0044]).

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26. Regarding claim 17, Raychaudhuri discloses the metal electrode being selected from the group consisting of Li, Mg, Ca, Al, Ag, In, Au, Ni, Pt, and alloys thereof (pg. 4, ¶ [0067]).

27. Regarding claim 18, Raychaudhuri discloses the metal electrode being selected from the group consisting of Li, Mg, Ca, Al, Ag, In, Au, Ni, Pt, and alloys thereof (pg. 4, ¶ [0066]).

28. Regarding claim 19, Raychaudhuri discloses the complex electrode comprising stacked layer electrodes of Li, Mg, Ca, Al, Ag, In, Au, Ni, Pt, ITO, IZO, AZO or ZnO (pg. 3, ¶ [0044-0045]).

29. Regarding claim 20, Raychaudhuri discloses the complex electrode comprising stacked layer electrodes of Li, Mg, Ca, Al, Ag, In, Au, Ni, Pt, ITO, IZO, AZO or ZnO (pg. 3, ¶ [0065-0066]).

30. Regarding claim 21, Raychaudhuri discloses the nanostructured organic electroluminescent recovery layer being a nanostructured thin film layer comprising dielectric material and nanoscale metal particles (pg. 4, ¶ [0068]).

31. Regarding claim 22, Raychaudhuri discloses the dielectric material for the nanostructured organic electroluminescent recovery layer being selected from the group consisting of silicides, oxides, carbides, nitrides, and combinations thereof (pg. 4, ¶ [0068]).

32. Regarding claim 23, Raychaudhuri discloses the dielectric material for the nanostructured organic electroluminescent recovery layer being selected from the group

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consisting of silicon oxide, aluminum oxide, magnesium oxide, silicon nitride, aluminum nitride, and magnesium fluoride (pg. 4, ¶ [0068]).

33. Regarding claim 24, Raychaudhuri discloses the nanoscale metal particles being selected from the group consisting of Au, Ag, Al, Ge, Se, Sn, Sb, Te, Ga, or combinations thereof (pg. 4, ¶ [0068]).

34. Regarding claim 25, Raychaudhuri discloses the nanoscale metal particles doped into the dielectric material (pg. 4, ¶ [0068]). The Examiner notes that the method of forming the nanostructured organic electroluminescent recovery layer is not germane to the patentability of the device itself (MPEP § 2113).

35. Regarding claim 26, Raychaudhuri discloses the nanostructured organic electroluminescent recovery layer comprising organic material and nanoscale metal particles (pg. 4, ¶ [0068]).

36. Regarding claim 27, Raychaudhuri discloses the organic material of the nanostructured organic electroluminescent recovery layer comprising molecular or polymer organic material (pg. 4, ¶ [0068]).

37. Regarding claim 28, Raychaudhuri discloses the nanoscale metal particles being selected from the group consisting of Au, Ag, Al, Ge, Se, Sn, Te, Ga, and combinations thereof (pg. 4, ¶ [0068]).

38. Regarding claim 29, Raychaudhuri discloses the nanoscale metal particles doped into the organic material (pg. 4, ¶ [0068]). The Examiner notes that the method of forming the nanostructured organic electroluminescent recovery layer is not germane to the patentability of the device itself (MPEP § 2113).

***Response to Arguments***

39. Applicant's arguments filed 20 July 2005 have been fully considered but they are not persuasive.

40. In response to applicant's argument that Raychaudhuri does not teach nanoscale metal particles in the transmission enhancement layer, the Examiner notes that Raychaudhuri discloses the transmission enhancement layer having a thickness in a *nanoscale* range and including metals, as discussed earlier in this office action. Thus, the Examiner holds that Raychaudhuri teaches *nanoscale* metal particles in the transmission enhancement layer as claimed.

**Contact Information**


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Quarterman whose telephone number is (571) 272-2461. The examiner can normally be reached on M-TH (7-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin Quarterman  
Examiner  
Art Unit 2879

kq   
24 September 2005

  
Joseph Williams  
Primary Examiner  
Art Unit 2879